

2000605SEQLIST.ST25
SEQUENCE LISTING

<110> Akzo Nobel Patent Department

<120> Lawsonia Intracellularis Vaccine

<130> 2000.605

<140> 10/034,500

<141> 2001-12-20

<160> 32

<170> PatentIn version 3.2

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Leu	Val	Asp	Tyr	Ser	Gly	Ser	Met	Met	Met	Lys	His	Val	Ala	Val	Arg	
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gag	cct	aaa	ata	gaa	tta	gca	aaa	gaa	gct	ata	tta	aaa	att	aat	gcg	144
Glu	Pro	Lys	Ile	Glu	Leu	Ala	Lys	Glu	Ala	Ile	Leu	Lys	Ile	Asn	Ala	
		35					40					45				

gca	atg	cct	aaa	atg	tca	tat	caa	ggc	gga	tta	tat	act	ttt	gca	cct	192
Ala	Met	Pro	Lys	Met	Ser	Tyr	Gln	Gly	Gly	Leu	Tyr	Thr	Phe	Ala	Pro	
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Tyr	Ser	Val	Ile	Ile	Pro	Gln	Gly	Ser	Trp	Asn	Ser	Cys	Val	Ala	Glu	
65					70					75					80	

tgt	gcg	gtt	aat	aca	att	aag	tct	gat	tta	gaa	att	ttt	ggc	cgt	ctt	288
Cys	Ala	Val	Asn	Thr	Ile	Lys	Ser	Asp	Leu	Glu	Ile	Phe	Gly	Arg	Leu	
				85					90					95		

act	cct	gtg	gga	gac	ggc	ata	aaa	atg	cat	gaa	aca	gtc	att	aat	caa	336
Thr	Pro	Val	Gly	Asp	Gly	Ile	Lys	Met	His	Glu	Thr	Val	Ile	Asn	Gln	
			100					105					110			

atg	ccc	cct	cag	gca	gcc	gtt	att	ctt	ctc	act	gat	ggc	cat	aat	aat	384
Met	Pro	Pro	Gln	Ala	Ala	Val	Ile	Leu	Leu	Thr	Asp	Gly	His	Asn	Asn	
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 cct aat gtt tgt ttt cat gta gtt tca ttt gca gat gat gct gaa ggc 480
 Pro Asn Val Cys Phe His Val Val Ser Phe Ala Asp Asp Ala Glu Gly
 145 150 155 160
 aaa gca ata att gat caa att gtt gca ctt aat agt gga agt gtt ctt 528
 Lys Ala Ile Ile Asp Gln Ile Val Ala Leu Asn Ser Gly Ser Val Leu
 165 170 175
 gtt gat ggt tta cag ctt cta caa aat cct gct gtt tgc caa gaa ttt 576
 Val Asp Gly Leu Gln Leu Leu Gln Asn Pro Ala Val Cys Gln Glu Phe
 180 185 190
 gtt aat agt gtt ttt tgt caa gag caa att ctt gtt aca gaa gaa gtt 624
 Val Asn Ser Val Phe Cys Gln Glu Gln Ile Leu Val Thr Glu Glu Val
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 35 40 45
 Ala Met Pro Lys Met Ser Tyr Gln Gly Gly Leu Tyr Thr Phe Ala Pro
 50 55 60
 Tyr ser val ile ile Pro Gln Gly Ser Trp Asn ser Cys val Ala Glu
 65 70 75 80
 Cys Ala val Asn Thr Ile Lys ser Asp Leu Glu Ile Phe Gly Arg Leu
 85 90 95

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 Thr Pro Val Gly Asp Gly Ile Lys Met His Glu Thr Val Ile Asn Gln
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Met Pro Pro Gln Ala Ala Val Ile Leu Leu Thr Asp Gly His Asn Asn
 115 120 125

Leu Gly Met Asn Pro Val Glu Glu Val Lys Ser Ile Tyr Gln Thr Asn
 130 135 140

Pro Asn Val Cys Phe His Val Val Ser Phe Ala Asp Asp Ala Glu Gly
 145 150 155 160

Lys Ala Ile Ile Asp Gln Ile Val Ala Leu Asn Ser Gly Ser Val Leu
 165 170 175

Val Asp Gly Leu Gln Leu Leu Gln Asn Pro Ala Val Cys Gln Glu Phe
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Val Asn Ser Val Phe Cys Gln Glu Gln Ile Leu Val Thr Glu Glu Val
 195 200 205

Val Val Leu Arg Gly Val Asn Phe Ala Phe
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 Gln Gln Ser Ser Phe Met Lys Gly Asp Gly Asp Gln Arg Phe Ser Pro
 20 25 30
 aaa caa cgt tta cgt act caa ata gac att gtt gca tca gag agt ctt 144
 Lys Gln Arg Leu Arg Thr Gln Ile Asp Ile Val Ala Ser Glu Ser Leu
 35 40 45
 aag ggt gtt gta ttc ttt gaa tta ggt aag act atc tgg gga cgt ggt 192
 Lys Gly Val Val Phe Phe Glu Leu Gly Lys Thr Ile Trp Gly Arg Gly

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Val Asp Gly Ala Ser Ile Gly Thr Asp Gly Lys Asn Val Ile Lys Leu
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cgt tat tcc tat gtt gat tgg gtt att cct tac aca gat gtg caa gtc 288
Arg Tyr Ser Tyr Val Asp Trp Val Ile Pro Tyr Thr Asp Val Gln Val
85 90 95

cgt atg ggt tta caa cct tat gtc ctt cca gga ttt gtt gca ggt tct 336
Arg Met Gly Leu Gln Pro Tyr Val Leu Pro Gly Phe Val Ala Gly Ser
100 105 110

aca ata tta gat gct gat gga gca ggt gtt act gtt tct gct gta ttt 384
Thr Ile Leu Asp Ala Asp Gly Ala Gly Val Thr Val Ser Ala Val Phe
115 120 125

aat gat tat tta ggt gct aca gct ttc tgg atg cgt gca ttg cat aaa 432
Asn Asp Tyr Leu Gly Ala Thr Ala Phe Trp Met Arg Ala Leu His Lys
130 135 140

aac tat gat agt aat tat gga ata tca aag cta cct aac ttt aaa ggt 480
Asn Tyr Asp Ser Asn Tyr Gly Ile Ser Lys Leu Pro Asn Phe Lys Gly
145 150 155 160

aca aca tta gat gta gtt gga tta act att cct gta aca ata tct gat 528
Thr Thr Leu Asp Val Val Gly Leu Thr Ile Pro Val Thr Ile Ser Asp
165 170 175

ata aaa att gct cca tgg ggt atg ttt gct ttt gca ggt aag aag agc 576
Ile Lys Ile Ala Pro Trp Gly Met Phe Ala Phe Ala Gly Lys Lys Ser
180 185 190

tta tta ggg gaa agc tat gga gat att gaa gat gta aga gca ggt ctt 624
Leu Leu Gly Glu Ser Tyr Gly Asp Ile Glu Asp Val Arg Ala Gly Leu
195 200 205

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Leu Pro Ala Met Pro Ala Gly Phe Gly Tyr Ser Trp Gly Ala Gly Asn
210 215 220

cca ttt gga gat gtt ttt cca aat aaa aag cgt ggt aat gca tgg tgg 720
Pro Phe Gly Asp Val Phe Pro Asn Lys Lys Arg Gly Asn Ala Trp Trp
225 230 235 240

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Val Gly Leu Ser Ala Glu Leu Ala Gly Ser Ser Pro Leu His Ile Ala
245 250 255

ggt gat ggt gct tat gga cga gca gac tta gga agt ctt aga aat gtt 816
Val Asp Gly Ala Tyr Gly Arg Ala Asp Leu Gly Ser Leu Arg Asn Val
260 265 270

ggt att ggt gac ttc tta cta gat aag att gat tta aaa cgt caa ggt 864
Val Ile Gly Asp Phe Leu Leu Asp Lys Ile Asp Leu Lys Arg Gln Gly
275 280 285

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aat act att gct ggc tca tgg ggt gtt gta gtt cag ttg aaa gat att Asn Thr Ile Ala Gly Ser Trp Gly Val Val Val Gln Leu Lys Asp Ile 355 360 365	1104
tct ttc tta gaa aat cta act cat gtt atc cgt gga gct aga att cag Ser Phe Leu Glu Asn Leu Thr His Val Ile Arg Gly Ala Arg Ile Gln 370 375 380	1152
ggt aca aat aat aaa gac gtt cct gaa cac tta ggt tta tca tac gtt Gly Thr Asn Asn Lys Asp Val Pro Glu His Leu Gly Leu Ser Tyr Val 385 390 395 400	1200
act acc att tat gac aca cgt ggt ggt gat aat atg ctt tac tta aca Thr Thr Ile Tyr Asp Thr Arg Gly Gly Asp Asn Met Leu Tyr Leu Thr 405 410 415	1248
aag aaa gat tat gct tgg gaa gta gat ttt gat act gaa tat aaa atc Lys Lys Asp Tyr Ala Trp Glu Val Asp Phe Asp Thr Glu Tyr Lys Ile 420 425 430	1296
tat aaa gac tta agt gta gct ctt gaa ctg tca tat att cgt ctt gaa Tyr Lys Asp Leu Ser Val Ala Leu Glu Leu Ser Tyr Ile Arg Leu Glu 435 440 445	1344
ctt gat aaa aaa cta tgg aac ctt caa aga gaa gtt gat aag aat gcc Leu Asp Lys Lys Leu Trp Asn Leu Gln Arg Glu Val Asp Lys Asn Ala 450 455 460	1392
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Lys Gln Arg Leu Arg Thr Gln Ile Asp Ile Val Ala Ser Glu Ser Leu
 35 40 45

Lys Gly Val Val Phe Phe Glu Leu Gly Lys Thr Ile Trp Gly Arg Gly
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Val Asp Gly Ala Ser Ile Gly Thr Asp Gly Lys Asn Val Ile Lys Leu
 65 70 75 80

Arg Tyr Ser Tyr Val Asp Trp Val Ile Pro Tyr Thr Asp Val Gln Val
 85 90 95

Arg Met Gly Leu Gln Pro Tyr Val Leu Pro Gly Phe Val Ala Gly Ser
 100 105 110

Thr Ile Leu Asp Ala Asp Gly Ala Gly Val Thr Val Ser Ala Val Phe
 115 120 125

Asn Asp Tyr Leu Gly Ala Thr Ala Phe Trp Met Arg Ala Leu His Lys
 130 135 140

Asn Tyr Asp Ser Asn Tyr Gly Ile Ser Lys Leu Pro Asn Phe Lys Gly
 145 150 155 160

Thr Thr Leu Asp Val Val Gly Leu Thr Ile Pro Val Thr Ile Ser Asp
 165 170 175

Ile Lys Ile Ala Pro Trp Gly Met Phe Ala Phe Ala Gly Lys Lys Ser
 180 185 190

Leu Leu Gly Glu Ser Tyr Gly Asp Ile Glu Asp Val Arg Ala Gly Leu
 195 200 205

Leu Pro Ala Met Pro Ala Gly Phe Gly Tyr Ser Trp Gly Ala Gly Asn
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Pro Phe Gly Asp Val Phe Pro Asn Lys Lys Arg Gly Asn Ala Trp Trp

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